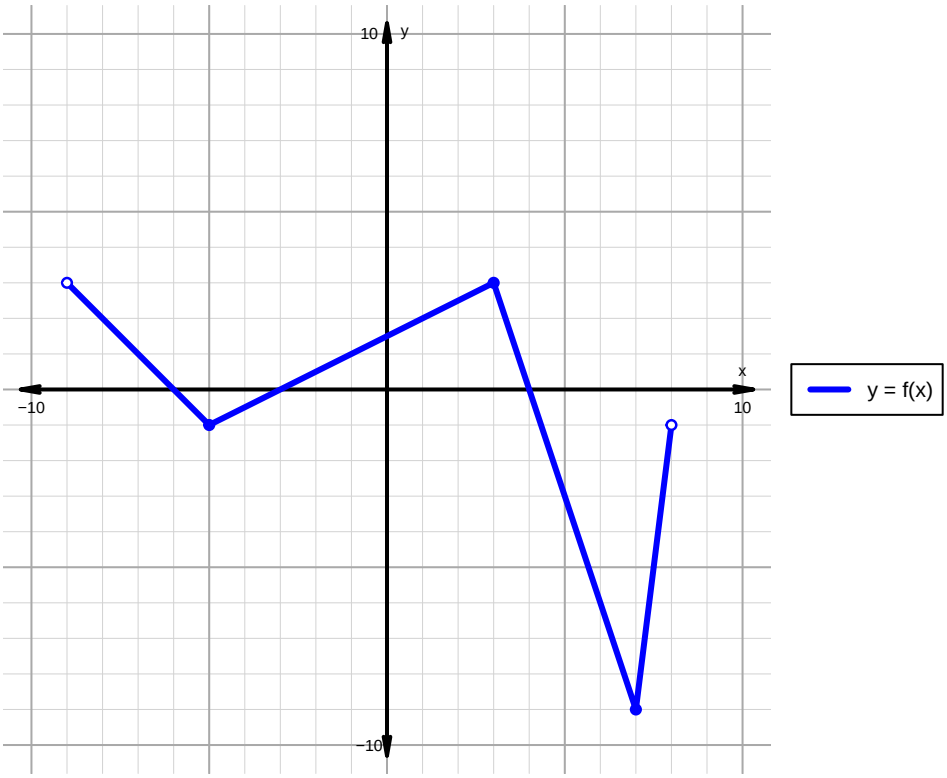
Name: Date:

Intervals, Transformations, and Slope Solution (version 27)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-9,-6)\cup(-3,4)$
Negative	$(-6,-3)\cup(4,8)$
Increasing	$(-5,3)\cup(7,8)$
Decreasing	$(-9,-5)\cup(3,7)$
Domain	$(-9,8)$
Range	$(-9,3)$

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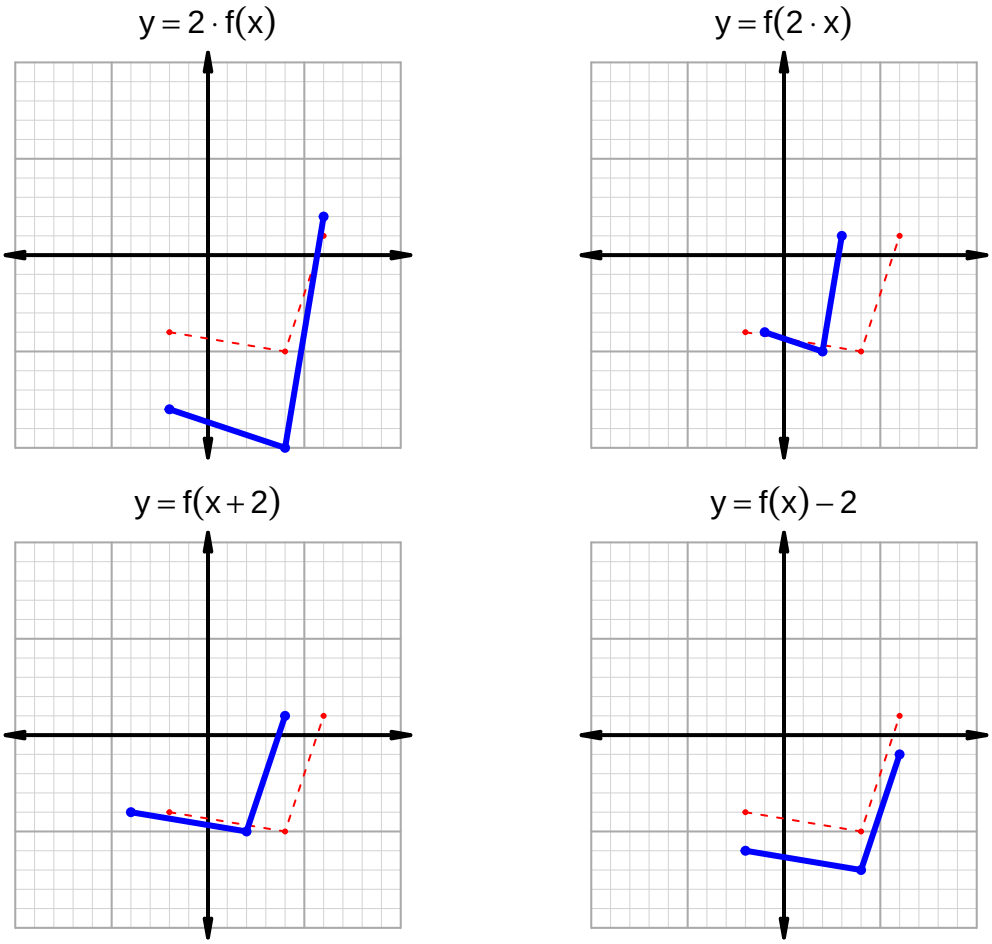
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 34$ and $x_2 = 46$. Express your answer as a reduced fraction.

x	$g(x)$
34	85
46	71
71	34
85	46

$\frac{f(46)-f(34)}{46-34} = \frac{71-85}{46-34} = \frac{-14}{12}$

The greatest common factor of -14 and 12 is 2. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-7}{6}$$